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This final chapter includes the technical characters of the families and genera represented in America, with synoptical descriptions of the species. The system adopted may be summarily shown as follows:—

CHARACEÆ Richard.

Family I. NITELLÆ u. Leonhardi.

Genus 1. *Nitella* Ag., containing 79 species.

Genus 2. *Tolypella* A. Braun, with 13 species.

Family II. CHARÆ u. Leonhardi.

Genus 3. *Lamprothamnus* A. Braun, containing a single species, presenting three varieties.

Genus 4. *Lychnothamnus* Rupr. u. Leonhardi, with 3 species.

Genus 5. *Chara* Vaill u. Leonhardi, with 62 species, besides many varieties.

The order is thus shown to contain 158 species, of which 58 are given as North American, there being 30 species of *Nitella*, 8 of *Tolypella*, and 20 of *Chara* so recorded.—*Charles E. Bessey*.

ZOOLOGY.

DIRECT NUCLEAR DIVISION IN EUPLOTES.—Dr. K. Mobius describes (*Stzb. Gesellsch. Naturf. Freund*, Berlin, 1887) direct nuclear division in the fission of *Euplotes harpa*. The nucleus elongates transversely, becomes thinner in the middle, and at length divides, the two halves remaining connected by but a thread at the time when the oral cilia of the second individual are formed. Killing with osmic acid and staining with saffranin showed that the chromatin was mostly arranged in thread-like rows of granules and that karyokinetic figures were never formed.

THE FOOT IN PROSOBRANCHIATE MOLLUSCS.—Mr. H. L. Osborn (*Proc. Am. Assoc. Adv. Sci.*, XXXVI.) gives in abstract the results of his researches on the morphology of the foot in the Gasteropods. In *Fasciolaria* and *Fulgur* it arises as a paired (not median) elevation of the ectoderm behind the velum and the blastopore. These later coalesce. The conclusions are that this organ must be regarded as ontogenetically, and, possibly, phylogenetically, belonging to the series of paired locomotor organs, like those of annelids and arthropods. To this view, however, the author points out certain difficulties.

THE ELECTRIC LIGHT IN MARINE COLLECTING.—Professor W. A. Herdman communicates to *Nature* an account of experiments made with the electric light in marine collecting, from which we make the following extracts: A sixty-candle power Edison-Swan submarine light was arranged in the mouth of a tow-net, and the whole lowered to a depth of three fathoms and allowed to remain there for half an hour. Another similar net, but without illumination, was lowered on the opposite side of the ship to the same depth and for the same length of time. When hauled to the surface the dark net contained practically nothing, while the other held an abundant gathering, consisting chiefly of Crustacea. Another test was made, both nets being lowered to the bottom (six fathoms), and with similar results. It was noted that the Amphipods taken with the light in the deep net appeared to be mostly red-eyed species. If on detailed examination this is confirmed, it may indicate an interesting relation between the color of the eyes and sensitiveness to the electric light.

THE FAUNA OF THE SUEZ CANAL.—Dr. E. von Martens exhibited at a meeting of the Berlin Gesellschaft Naturforschender Freunde (*Stzber.* 1887) a collection of shells made in the Suez Canal, and made some remarks upon the origin of the fauna of the Canal. Collating all known observations, he found that of twenty-seven species of molluscs found in the Canal, nine came from the Mediterranean and eighteen from the Red Sea. An examination of the fishes showed a similar condition. Of sixteen species reported from the Canal, six were from the Mediterranean and ten from the Red Sea side. The distribution of the species in the different parts of the Canal is shown by tables; and a glance at these clearly indicates that the admixture of faunæ is far from complete.

BRAIN OF CERATODUS.—In a paper (*Proc. Roy. Soc'y.*, XLIII.) Mr. Alfred Sanders concludes that the brain of Ceratodus presents an embryonic condition in three respects, viz.: first, in the extreme size of the ventricles and in the tenuity of the substance of their walls; second, in the alternating origins of the dorsal and ventral roots; third, in the fact that the origins of the dorsal roots are close to the central line. Compared to Protopterus, it differs in the shape and the imperfection of the cerebral lobes, and in the fact of its having a well-developed rhinencephalon; but it agrees in the narrowness of the thalamencephalon and mesencephalon, and in the breadth of the medulla oblongata, as also in the rudimentary character of the cerebellum. Ceratodus agrees also with the ganoids in the comparative narrowness of the mesencephalon and in the proportions of the cerebellum. With the Plagiostomes it agrees in the structure of the optic lobes, both orders presenting a large ganglion

of large cells in the dorsal part. With the Teleostei it agrees in the multi-axial fibres which, a short distance anterior to its termination, resemble Mauthner's fibres, also in the position and fact of their decussation. With *Petromyzon* it agrees in the structure of the tela choroidea, which covers the fourth ventricle.

DEEP SEA FISHES.—Not less than 3800 specimens of deep-sea fishes were dredged in the last voyage of the *Talisman*. At the dredging No. CX., as many as 931 were captured, of which 780 were *Hymenocephalus italicus* Giglioli.

The truly deep-sea fishes, says M. L. Vaillant, belong to the Elasmobranchiata and to the Teleostei, since the Marsipobranchs do not descend beyond five or six hundred metres. The deep-sea Elasmobranchs yet known are few, and these, singularly enough, are all sharks. That they are very abundant at certain points is proved by the special fishery of Setubal (off the coast of Portugal), and by some individuals taken by the *Talisman* on the Soudan coast, at depths of from 600 to 1400 metres. Below 500 metres the Acanthopteri become scarce, and such as occur belong for the most part to abnormal types; such as *Melanocetus johnsonii* and the species of *Notacanthus*. Apodal fishes seem to be more abundant, but the great bulk of the abyssal fishes belong to the Abdominales and to the Anacanthini.

The family Alepocephalidæ, which for a long time contained but a single species, has now six genera, two of them formed to contain species collected by the *Talisman*, viz.: *Anomalopterus pin-guis* and *Leptoderma macrops*. Other new species of this family gathered by the *Talisman* are: *Alepocephalus macropterus*, *Bathytroctes attritus*, *B. homopterus*, *B. melanocephalus*, and *Xenodermichthys socialis*. These forms, added to those described by Dr. Gunther and others, raise the known species of this family to fifteen. Most of these fishes have the dorsal and anal fins thrown back upon the caudal peduncle, and seem adapted for easy and rapid locomotion.

Among the Anacanthini of the abyssal fauna the Pleuronectidæ are not present. *Pleuronectes megastoma* was dredged by the *Talisman* in 560 metres, and this is the greatest depth at which any fish of this family has yet been found. Among the Lycodidæ, *Lycodophis albus* has been found at more than 4000 metres. The Gadidæ themselves have not been dredged at great depths, except the new genus *Scopelogadus*, which has been taken at 3655 metres.

The absence of Gadidæ from deep-sea dredgings may possibly be accounted for by the superiority of their swimming powers, while, says M. L. Vaillant, the abundance of the Ophidiidæ and Macruridæ may be correlated with the weakness of their caudal peduncle, and the almost complete absence of the caudal fin. The *Talisman*

dredged the Macruroid *Coryphænoides gigas* at a depth of 4255 metres, and *Alexiterion parfaiti*, nov. gen. and sp. of Ophidiidæ at 5005 m. Among new Ophidiidæ collected by the Talisman are two species of Porogadus and five of Bathyonus. Many of these were taken at 3200 metres.

The abyssal fish fauna seems to be in great part homogeneous. Bathysaurus, Halosaurus, Bathypterois, Macrurus, Coryphænoides, and many other genera are found both in the Atlantic and in the Pacific, and many species seem to have an extensive distribution. Thus *Dicrolene introniger* occurs near the North American coasts and on those of the Soudan; *Macrurus holotrachys* Gunt., discovered at the mouth of the La Plata, has been dredged on the Moroccan coast; *Stomias boa* of the Mediterranean has been taken in the Arctic Ocean, in the Atlantic, and in the Pacific; and the Talisman captured at the Azores, off the Soudan, and at the Cape Verde Islands, a Macrurid which seems to be *Macrurus japonicus* Schleg.

VACUITIES IN THE SKULLS OF MAMMALS.—Dr. D. D. Slade presents (*Bulletin Mus. Comp. Zoology*, XIII., 8) a comparative study of certain vacuities found in the macerated mammalian skull. These spaces are due to an arrest of osseous development, and are secondary to the original growth of the bone, but are not to be confounded with air-cells like those of the elephant or as products of absorption. Two types are distinguished: (1) Those that are dependent upon arrested ossification in the body of a bone or at a point where several bones would otherwise come in contact, but neither of which has any special adaption to function; (2) Those that are due to enlarged openings, the result of arrested ossification, which have adaption to special function, and retain this, notwithstanding the modifications which they may have undergone. Examples are described in all of the orders of Mammalia, two plates illustrating the paper.

THE TEETH OF SHEEP.—Miss Florence Mayo has recently investigated (*Bulletin Mus. Comp. Zool.*, xiii.) the question as to whether at any stage of development there occur germs of the superior canines and incisors in the sheep, a question upon which there were conflicting opinions. She finds that at a certain stage in the development of the embryo sheep the dental lamina exists throughout the incisor and canine regions and that in the latter an enamel organ is formed but nowhere is there a dentine germ. No enamel is ever formed and the organ soon disappears. From the standpoint of phylogeny Miss Mayo thinks that the disappearance of the teeth has been a progressive one, beginning with the middle incisors and gradually extending back. This has already been shown by palæontology.

LOCAL VARIATIONS IN THE COLORS OF A FEW NEBRASKA FLYING SQUIRRELS.—Coues and Allen, pp. 656-661, *Monographs of North America Rodentia*, published in 1877, being Vol. XI. of Hayden's Report of the United States Geological Survey of the Territories, state that :

"The American Flying Squirrel, (*Sciuropterus volucella*), presents a range of geographical variation in size quite unparalleled in other members of the *Sciuridæ*, and only equaled in some species of the *Canidæ*, and possibly in *Cervus virginianus*. On the other hand the coloration is remarkably constant, almost exceptionally so. * * * Specimens from the same locality sometimes differ in the color of the dorsal surface as much as do the most diverse examples from widely separated localities."

The local variations in color are well illustrated by five specimens before the writer, viz:—

No.	When collected.	Collector.	Length of body.	Length of tail.	Age.
1	Oct. 26, '85	Miss S. Thom	7.25	5.35	Adult
2	Winter (?), '87	W.B. Harmon	7.00	5.00	Adult
3	Nov. 10, '85	E. E. Good	6.05	5.00	Ad't (?)
4	Nov., '85	J.W.Crabtree	5.20	4.25	Young
5	Winter (?), '87	W.B. Harmon	7.00	5.00	Adult

In numbers one and four the dorsal surface was a dusky brown tinged with fulvous ; while the dorsal surface of numbers two and three was nearer a dull yellowish, with a very slight taint of fulvous. The color of the furred membrane of numbers one, two, three and four is of a decidedly blackish cast, deepening near the edges ; each specimen being of about the same shade. In each the ventral surface is whitewashed with yellow or fulvous, there being but a slight shade in the washings. Pelage on the ventral surface white to the base.

The upper portion of the tail of numbers one, two, three and four was a dusky yellow color tinged with black, the tail of number two possessing more black than the rest, it being of a darker cast than the dorsal surface of the body. In the case of numbers one and four the dorsal surface of the body possessed more black than the upper surface of the tail, while number three approximated number two. The upper surface of the tail of number two was perceptibly blacker near the distal end. Excepting very slight shades of yellow the under surfaces of the tails of numbers one, two, three and four, were alike ; being of a slightly dusky light yellow. Immediately beneath and longitudinally with, the vertebrae of the tails of the four specimens mentioned, was a faint white line. In all the lower surface of the tail is darker and more fulvous than the lower surface of the body ; also lighter and much

more yellow than the dorsal surface of the body. In numbers one, two, three and four the eye is encircled by a narrow dusky ring; also in front of this organ is a dusky spot, while the white spot ordinarily found at the base of the ear was almost, if not completely, obsolete.

Number five was a very unusual specimen, both in color and in the arrangement of the color. Mr. W. B. Harmon, who collected this specimen, states that four other squirrels were found in the nest with this one, number two being one. The other two appeared to be similar to number two in color. Besides the measurements already given the description of number five is as follows:

Dorsal surface very light fulvous brown; the color being very regular over the dorsal surface. Below light cream white faintly tinged around the edges with light fulvous brown. Tail above of the same color and shade as the dorsal surface of the body, with edges a shade lighter. The tail below was a shade lighter still and marked by a faint white streak immediately below and longitudinally with the tail vertebræ, and increasing in width and distinctness near the distal end. Pelage on the ventral surface white to the base. The white spot at the base of the ear was quite distinguishable, being about the size of the ear. The narrow dusky ring around and the dusky spot in front of the eye, ordinarily, were obsolete. The pelage on the upper surface of the body was of the same color to the base. The only black or dark hairs visible were the mustaches, which were black. The hair has the appearance of being in a healthy condition, and the specimen is rather above the average size. This specimen is undoubtedly an extreme case of color variation.

Habitat, near Nebraska City, Nebraska, on the Missouri river, in latitude about 40° 30'.

It might be well to notice that the average measurements given in this article are about the same given by Coues and Allen for *S. volucella* var. *hudsonius*, which is stated to exist "mostly north of the parallel of 49°; average measurements of var. *volucella*, the southern variety, being much less.—W. Edgar Taylor, Nebraska State Normal School, Peru, Nebraska.

ZOOLOGICAL NEWS.—SPONGES.—J. Arthur Thompson describes (*Trans. Roy. Soc., Edin.*, xxxiii.) the structure of the sponge *Suberites somuncula*. The study was rendered difficult from the presence of large numbers of silicious spicules. The ciliated chambers are small, and are in connection with the canal system, the afferent and efferent canals lying side by side. The canal system is of what is known as the fourth degree of complexity. In the same paper are noticed peculiar club-shaped prominences on the surface of *Spongelia* the function of which is problematical. These knobs

have a well-developed ectoderm, the centre being occupied by a compact and intricate network of fine filaments, the meshes of which were occupied by cells of varied size. Similar structures, it may be noted, occur in several American sponges.

CÆLENERATA.—G. H. Fowler describes (*Proc. Zool. Soc.*, 1888), a new Pennatula (*P. bellissima*) from the Bahamas. In its systematic position it stands nearest *P. naresii*.

Prof. A. M. Marshall monographs the Pennatulids collected by the "Porcupine" in the *Trans Roy. Soc., Edin.*, xxxiii. Sixteen species are enumerated.

MOLLUSCS.—R. S. Call describes as new (*Proc. Nat. Mus.*, 1887) *Unio ozarkensis* and *U. breviculus* from Missouri.

ECHINODERMATA.—Mr. A. B. Griffiths has proved that the nature of the secretion of the pancreatic follicles of *Uraster rubens* is similar to that of the pancreas of the Vertebrata. The secretion was submitted to a careful chemical and microscopical investigation (*Edin. Roy. Soc. Proc.*, No. 125, p. 120). With a quantity of the secretion uric acid crystals were extracted by methods previously described by the same writer. The pancreatic follicles are borne upon five pairs of tubules, each pair proceeding from one of five radial ducts given off by the pentagonal "pyloric sac" situated on the aboral side of the stomach of the star-fish. The tests showed the entire absence of urea in the secretion, and no guanin or calcium phosphate could be detected.

Researches into the nature of the secretion of the salivary glands of *Sepia officinalis* and *Patella vulgata*, recently carried out by Mr. A. B. Griffiths, prove that these organs have the same physiological function as the salivary glands of the Vertebrata. The cuttle-fish has two pairs of these glands, the secretion of the anterior smaller pair passing directly into the buccal cavity, while that of the posterior larger pair is poured into the œsophagus. The two salivary glands of *Patella* are situated in front of the pharynx and give off four ducts.

CRUSTACEA.—Richard Rathbun (*Proc. Nat. Mus.*, 1887) adds to our knowledge of American parasitic Copepoda by describing several new species belonging to the genera *Trebius*, *Perrisophus* and *Lernthrops*, from the collection of the U. S. Fish Commission.

According to Mr. A. B. Griffiths, the secretion of the so-called liver of *Carcinus maenas*, when freshly killed, gives an acid reaction, and its functions are more like those of the pancreas of the Vertebrata than like those of a true liver. The organ consists of two

large glands on each side of the stomach, of a yellow color, and composed of numerous cœcal tubes arranged in tufts.

FISHES.—Dr. H. H. Giglioli, of the Royal Museum of Florence, records (*Nature*, XXXVIII., 103) the receipt of the sixth known specimen of the rare *Lepidosiren paradoxa*, which for many years was only represented by Natterer's original specimens. The present individual was taken at Antaz, near the Madeira River, in September, 1887, and when received was in a state of incipient decomposition. Mr. G. B. Howes communicates a note on the same subject (*l.c.*, p. 126), calling attention to the specimen recorded by Bibron and Milne-Edwards in 1840.

Professor C. T. Lutken has recently (*Vidensk. Selsk. Skr. Kjob.*, IV.) described the skeleton and some other parts of the deep-sea toad-fish *Himantolophus*. Comparisons are made with *Ceratias*.

According to Prof. D. S. Jordan and B. W. Evermann, there are about 150 species of fishes known in the waters of Indiana, and about fifty of these may be regarded as food-fishes. Of the remaining kinds, some ten are large enough for food, but for one reason or another are not used. The flesh of the paddle-fish and shovel-nosed sturgeon is poor and tough, that of the gar-pikes is not eatable, while the hickory shad and skip-jack are valueless on account of their dry thin flesh, full of small bones.

The cisco of the deep lakes of Northern Indiana and Wisconsin, formerly thought by Prof. Jordan to be distinct from the leak herring, and named by him *Argyrosomus sisco*, is now held by the same authority to be only a local variety of *Coregonus artedii* modified by residence in the smaller lakes.

Prof. W. N. Parker lately read before the Roy. Zool. Soc. a communication on the poison-glands of the genus *Trachinus*. This paper showed the existence of glands, composed of large granular nucleated cells, continuous with those of the epidermis, in connection with the grooved dorsal and opercular spines of the two British species of the genus.

Dr. A. Gunther (*Ann. and Mag. Nat. Hist.*, June, 1888) describes nine new species of fishes from the Yangtsze-kiang, collected at or near Ichang. One of these, *Eleotris xanthi*, belongs to the spine-finned section, the others are Cyprinidæ or Cobitidina.

M. R. Storms has, in an article in the *Annals and Magazine of Nat. Hist.* for July last, attempted to solve the questions pertaining to the structure and morphology of the disk of the remora. That the disk is a modified spinous dorsal, and not of dermal origin, he believes to be proved: (1), by its position; (2), by the slight transformation of the interneural spines; (3), by the presence of the changed, yet recognizable elements of a normal spinous dorsal fin. A typical segment of the spinous dorsal of *Scomber* has three

elements: (1), an interneural spine; (2), an intercalary bone (or baseost) which has the shape of two wings; and (3), a spinous ray. A division of the disk of *Echeneis* has also three elements; the lower extremities of the interneurals point backwards instead of forwards; the intercalary bone is formed of wing-like plates, and the spinous ray is represented by a pair of pectinated lamellæ joined in the median line and occupying the whole surface of the disk. The upper expanded portions of the interneural spines each carry a pair of lamellæ. The wing-like plates of the intercalary bone are connected by a narrow portion which expands in the middle and rests partly on the interneurals, and the wing-like parts of the consecutive intercalary bones overlap one another like the tiles of a house. The pectinated lamellæ are discovered by M. Storms as transversely enlarged spines, and he believes that the bases of the spines alone have formed the lamellæ, and that the spine proper was gradually reduced until it has nearly disappeared. The rows of small teeth which cover the posterior margins of the lamellæ are by M. Storms thought to be of dermal origin. That they are not formed by outgrowth of the bone is proved by the facility with which they fall off by prolonged maceration. The fossil *Echeneis glaronensis*, the disk of which extends only on to the posterior part of the head, instead of covering its whole surface, seems to support our author's supposition that the disk was originally formed on the dorsal region, and has migrated gradually to its present position.

REPTILES AND BATRACHIA.—Dr. O. P. Hay's list of Amphibia and Reptilia at present known to occur in the State of Indiana includes seventy-seven species, twenty-seven of which are Batrachia.

Dr. A. Günther (*Ann. and Mag. Nat. Hist.*, May, 1888) describes seventeen new species of snakes from tropical Africa, including four of *Ahaetulla*, five of *Boödon*, and one each of *Causus*, *Elapsoidea*, *Simocephalus*, *Psammophis*, *Uriechis*, *Calamelaps*, and *Elapomorphus*, also *Rhinocalamus dimidiatus*, new genus and sp.

Following the above paper Dr. Günther contributes a list of the snakes known from the lake-districts of Central Africa, and shows what is known of their distribution on the east and west coast. The difficulties attending the carriage of natural history specimens in Central Africa is so great, that it is only within the last few years that small collections of snakes have reached Europe. The list contains forty-six distinct forms obtained at Lado, Monbuttee, and Semmio, on the great Central African lakes southward to Lake Nyassa, at the foot of Kilimandjaro, in the Mpwapwa Mountains, and on the highlands of Ugogo. Of these, twenty-two have been found on the West coast, and twenty-five either in the Mozambique or Zanzibar districts of the East coast.

G. A. Boulenger (*Ann. and Mag. Nat. Hist.*, May, 1888) gives the distinguishing characters of the families Pelomedusidæ and Chelydidæ, and states that the former family (though from its structure it must be included in the Pleurodera) differs from the rest of that group in having the neck completely retractile within the shell.

Dr. Paul Sarasin describes the lateral organs of the larva of the Ceylonese cœcilian as related to auditory organs of the invertebrate type.

According to *Nature*, a communication from Mr. George A. Treadwell was read at the meeting of the Zoological Society of London, May 15, containing an account of a fatal case of poisoning from the bite of the Gila monster (*Heloderma suspectum*).

Among a small collection of reptiles and batrachians made at Iguarasse-Pernambuco, Brazil, Mr. C. A. Boulenger reports the occurrence of a new species of *Sphærodactylus*, two of *Hylodes*, and one of *Nototrema* (the marsupial tree-frog). The other known species of the last-named genus are restricted to the Andes, from Central America to Peru.

The same naturalist also describes *Achalinus rufescens*, and *Calamohydrus* (n. g.) *andersonii*, two new species of snakes from Hong-Kong. A specimen of the rare sea-snake *Hydrophis viperina*, Schmidt (*Disteira præscutata* D. and B.) reveals, according to the same naturalist, a new type of dentition, since, instead of a pair of grooved fangs, followed after an interval by a series of smaller solid teeth, as is normal among the Hydrophidæ, it has a series of four equidistant, sub-equal, grooved fangs. *Ogmodon vitianus* Peters, is the only snake previously known to possess a series of grooved fangs.

G. A. Boulenger (*P. Z. S.*, Feb. 7, 1888) describes two new forms of *Hoplocephalus* from the Solomon Islands, and gives a list of the Reptiles and Batrachia of the group, comprising a crocodile, seventeen lizards, ten ophidians, and thirteen batrachians.

BIRDS.—Dr. Emin Pasha has recently forwarded to the London Natural History Museum, two collections of birds, the first, comprising 114 forms, from the Wadelai district, between 2° and 5° N. Lat., and 31° and 33° E. Long., while the other, consisting of forty-three species, is from the Tingasi district, westward of 31° E. Long. In the latter collection there is not a single East-African form, while in the former thirty-three forms belonging to the fauna of E. and N. E. Africa occur. It is thus evident that on the western water-shed of the lake-system of Equatorial Africa the Abyssinian fauna disappears and is replaced by the purely tropical features of the West-African river-system. Mr. Thomas attributes the abruptness of the change of fauna, exhibited both by mammals

and birds, to the sudden ending of the great West-African forest. Five previous papers, by Drs. von Pelzeln and Hartlaub, have described former ornithological collections sent to Europe by Emin Pasha, so that it is not to be wondered at that this, the first consignment received at London, contains only four new species.

MAMMALS.—In three papers (*Proc. Amer. Philos. Soc'y*, XXV.) Professor T. B. Stowell describes the glosso-pharyngeal, accessory, and hypoglossal nerves in the domestic cat. Three plates of diagrams illustrate the accounts.

At the meeting of the Royal Society of Edinburgh, May 7, 1888, Dr. Alexander Bruce described a case of absence of the corpus callosum in the human brain.

The skeleton of a second specimen of Swedenborg's whale (*Eubalæna swedenborgii*) has been discovered in Norway. It is said that the original specimen was discovered in the early part of the last century in Gothland, and that the bones were regarded as those of a giant, but that Swedenborg discovered their true nature.

Embryologists will find an account of the ductus endolymphaticus of the ear of the cat, by N. Rüdinger, in the *Sitzungsberichte* of the Munich Academy of Science for 1887. It is illustrated by three plates.

Dr. A. Nehring criticises (*Stz. Gesell. Naturf. Freunde*, Berlin, 1887) Gray's genera of the Fish-Otters. *Lutronectes* is based on two immature specimens of *Lutra vulgaris* from Japan. The genus *Lontra* of Gray, characterized by the hairiness of the muzzle, is untenable, because founded on individual variations. Nehring regards *Lontra braziliensis*, *Lutra enhydris*, *L. macrodus*, *L. solitaria*, *L. paranensis*, and *L. platensis* as nothing but local variations of one broad-fronted South American species. *Pteronura sandbachii* of Gray is regarded by Hensel as identical with *Lutra braziliensis* of F. Cuvier. Nehring also states (*l.c.*, p. 66), contrary to Gray and Wallace, that *Canis hodophylax* of Japan is not near to or identical with *C. rutilans* of Sumatra, but rather is to be associated with *C. pallipes* of India.

Mr. A. E. Pratt has obtained an example of the porpoise of the Yangtze-kiang, which proves to be identical with, or closely allied to, *Delphinus melas* Schlegel.

T. Southwell, F. S. Z., after bringing together all accessible data upon the subject, comes to the conclusion that the European otter breeds in autumn and winter, but more often in the winter.

The collection of mammals recently received by the Natural History Museum of London from Dr. Emin Pasha includes 115 specimens of thirty-nine species. Every specimen is labelled with date, sex, and exact locality, in his own handwriting. Among them

is a chimpanzee, a *Colobus guereza*, two examples of *Galago demidoffi*, the flying squirrel *Anomalurus pusillus* n. sp., and a new coney *Dendrohyrax emini* Thomas. Fourteen of these species have not before been recorded outside of the West-African region, and Emin Pasha has therefore extended their known range a thousand or twelve hundred miles.

ENTOMOLOGY.¹

A NEW ENTOMOLOGICAL JOURNAL.—The first number of an entomological journal bearing the title *Insect Life* has just been sent out from the Division of Entomology of the United States Department of Agriculture. This journal is “devoted to the economy and life-habits of insects,—especially in their relations to agriculture,—and is edited by the entomologist and his assistants, with the sanction of the Commissioner of Agriculture.” We are glad to welcome this periodical, for we believe it will be an exceedingly useful one. As the writer knows from personal experience, a vast amount of interesting matter accumulates in the office of the entomologist, and is buried there simply because the individual items do not seem of sufficient importance to be published in the formal reports of the department. It often happens, also, that results of considerable scientific interest are obtained, the practicable application of which cannot be seen at the time. Naturally, a government entomologist hesitates to publish such results in a report intended primarily for agriculturists. The pages of *Insect Life* will form an appropriate receptacle for all data of this kind. It will, also, enable the entomologist to publish promptly matter of ephemeral interest which would lose its value if kept for the annual report.

The present number contains several articles of considerable interest in addition to a large number of minor notes. We have only a single criticism to offer upon *Insect Life* as represented by the initial number. We regret to see in it an article of the nature of the one entitled *New Species of Oncocnemis*. This article consists of the technical description of five species of moths. In four

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